California's Shareholder Incentive Mechanism: A Ratepayer Perspective

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ABSTRACT

State policy makers and regulators need to consider the costs and potential problems when the shareholders of energy utilities are allowed to earn financial rewards as incentives for achieving energy efficiency goals. The basic premise of a shareholder incentive mechanism is that regulated utilities will only excel at delivering energy efficiency measures if they have a financial incentive to do so, because reducing energy use is not otherwise in their best interest. There are two types of incentives in California's energy efficiency programs: those given to customers to encourage adoption of energy efficient measures and those given to utility shareholders when the energy efficiency program meets a percentage of the state's targets for energy saving goals. In 2007, the California Public Utilities Commission (CPUC) adopted a new incentive mechanism known as the Risk Reward Incentive Mechanism (RRIM), which will increase the cost of California's $2 billion energy efficiency program by up to $450 million. These financial incentives are in addition to full program cost recovery. This paper provides background relative to the current mechanism, describes its impact to date, discusses how it is evolving, and highlights specific attributes of California's mechanism that could be improved by other states who are considering similar financial incentive programs. Alternatives to California's "shared savings" incentive mechanism are also provided.

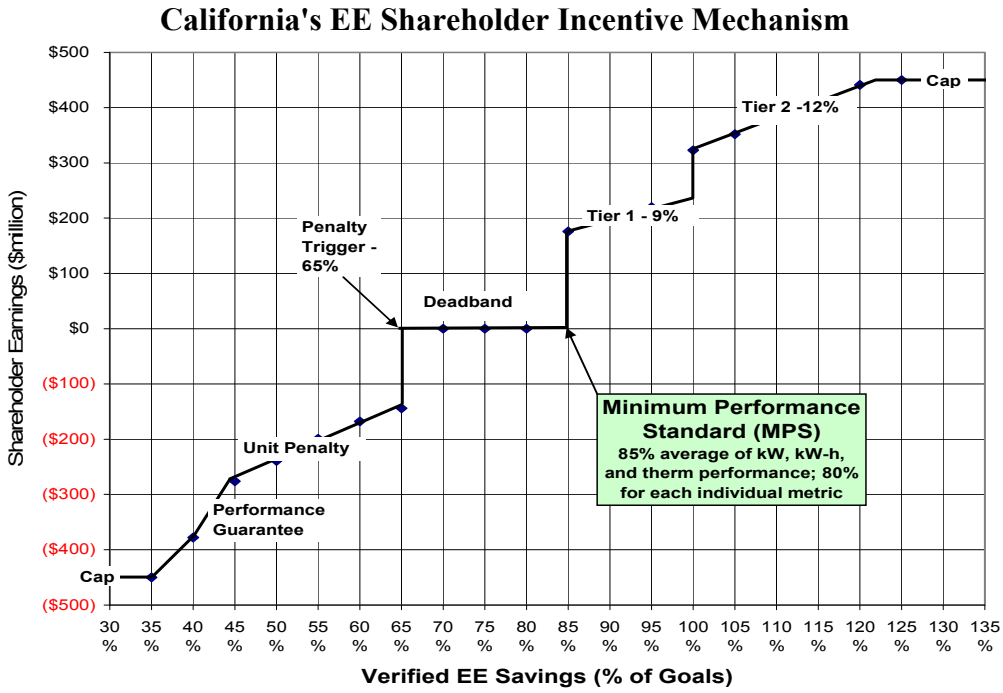
Energy Efficiency and Shareholder Incentives in California

California is considered a leader in energy efficiency as illustrated by a #1 rating in ACEEE's latest bi-annual ranking (Eldridge et al., 2008). The demand side management (DSM) policies that have evolved in California over the last four decades meet all ten of the U.S. Department of Energy recommendations to promote energy efficiency (DOE, 2007; DRA, 2007a). Energy efficiency programs in California are funded by ratepayers and administered by utilities, in accordance with rules, policies, and goals established by the California Public Utilities Commission (CPUC). The focus of energy efficiency programs has shifted over time from "resource acquisition" programs to "market transformation" programs. Resource acquisition programs aim to provide measurable energy savings capable of offsetting energy procurement. In the industrial sector for example, resource acquisition programs transfer funds from ratepayers to industrial customers, such that conversions to more energy efficient buildings and processes have reasonable payback periods. Market transformation programs strive to decrease the price, and increase the demand for energy efficiency products and services, such that subsidy programs are no longer required. Market transformation programs, like resource acquisition programs, increase the cost-effectiveness of investments in energy efficiency, but do so by funding programs aimed at reducing the market price of energy efficient equipment and services. Since 2006, these programs have been managed in 3-year cycles, with 2009 being the first year of a new cycle. California utilities expended over $1.9 billion for 2006-08 programs, and have requested $3.7 billion for 2009-11. One reason for this dramatic increase in program costs is that portfolios are now guided by the CPUC's energy efficiency Strategic Plan (the

Strategic Plan), which mandates both resource acquisition and market transformation goals (CPUC, 2007a).

California's Adopted Shared Savings Incentive Mechanism

California's Risk Reward Incentive Mechanism (RRIM) was designed and adopted for the 2006-08 cycle, when the CPUC's sole policy objective was resource acquisition. The RRIM is a "shared savings rate" mechanism that awards a percentage of net program benefits to utility administrators as an incentive for maximizing cost-effective energy savings (CPUC, 2007b).[1] Rewards are provided only after a minimum performance standard (MPS) is achieved. The reward rate increases from 9% to 12% if the utilities reach 100% of the energy savings goals. Penalties are included in the mechanism to discourage gross mismanagement, and the RRIM includes two penalties: per-unit (kilowatt, kilowatt-hour, therm) penalties are levied if performance falls below 65% of goals and a "performance guarantee" requires utilities to refund ratepayers if their energy efficiency programs produce negative net program benefits. The resulting "earnings curve" is illustrated below:



Source: Data from CPUC, 2007, reformatted by the author.

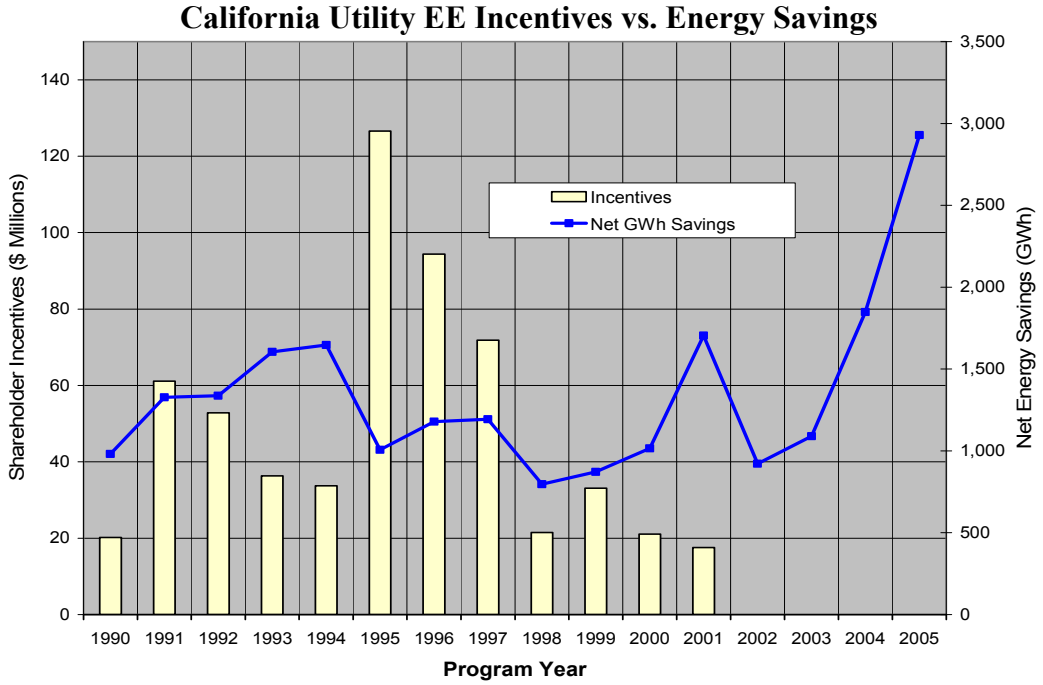
This is a simplified view of RRIM. Important details such as how performance towards multiple goals (kilowatt-hour, kilowatt, and therm) is credited and which programs count towards goals are beyond the scope of this paper. However, one facet of the RRIM that has generated considerable debate is how incentives are paid through the "earnings claim process." RRIM establishes that utility performance is ultimately determined by independent evaluation

[1] Net program benefits are defined by a Performance Earnings Basis (PEB) which is a predefined calculation of the net present value of program benefits minus specific program costs.

after programs are completed in a "final earnings claim," but the RRIM also provides the potential for annual "interim earnings claims." As discussed later in this paper, determination of interim earnings has generated considerable controversy.

History of Incentives in California

Shareholder incentives are not new to California. They were offered continuously from 1990 through 2001. The mechanism changed over time as California's energy efficiency policy goals changed from resource acquisition to market transformation. In many of these years, a shared savings mechanism, similar to the current RRIM, was used with sharing rates as high as 30% in 1995-97. One utility attempted to support a high sharing rate for 2006-08 by presenting data showing high correlation between historic energy savings and program **budgets**, which it claimed showed a correlation with **incentive level** (SDG&E, 2007, p.MMS-4). However, it was demonstrated that there was a low correlation between incentives paid out and energy savings realized, as illustrated below (TURN, 2007, Figure 5, p.30):



Source: Data from TURN, 2007, reformatted by the author.

This comparison was dismissed by the CPUC in the development of RRIM, as was the fact that none of the four major utilities were able to demonstrate any causal relationship between historic energy efficiency program savings and shareholder incentives (CPUC, 2007, p.193).[2]

[2] In addition, the CPUC dismissed comparisons of the incentive level established by California for meeting 100% of goals with incentive levels in other states. A comparison performed by DRA showed that California's incentives are the highest in the nation, and are approximately 2-3 times higher than incentives in states with comparably mature energy efficiency programs (DRA, 2007b, pp.13-16).

Current Status of California's RRIM

The Evolution of California's RRIM

Review of the CPUC's actions relating to energy efficiency incentives over the past three years reveals how the scales have been tipped further and further in favor of utility shareholders. The original CPUC decision in 2007 provided that the utilities and the ratepayers would each be made whole in the event of overpayment or underpayment of interim incentives to the utilities. This after-the-fact adjustment, referred to as an "*ex post* true-up," was a key ratepayer protection. Less than two weeks after this decision was adopted, California's utilities notified the CPUC that they would petition to modify the mechanism, and in January 2008, the previously established symmetrical true-up was abolished by a second CPUC decision (CPUC, 2008a). To reduce the risk of overpayment by ratepayers, this decision required the calculation of interim incentive claims using updated savings parameters to reduce uncertainty between interim and final payments. When preliminary data suggested these updates would significantly reduce the utilities' estimated energy savings and the incentive payment estimates they promised their shareholders, the Utilities filed a second petition asking for a non-refundable payment of $152 million for 2006-07 based on self-reported energy savings (Joint California Utilities, 2008, Attachment). Despite vigorous ratepayer protests, and a draft report from independent auditors stating that utilities had earned either nothing or a penalty, the CPUC issued a third decision in December 2008, which awarded $82 million collectively to the utilities and further changed the RRIM (CPUC, 2008b). The final report from the independent auditors, released February 5, 2009, indicated that one utility should have received $2.9 million and the others nothing (CPUC, 2009a, Table ES1, p.8). However, the December 2008 decision rendered this finding "moot."

In January, the CPUC chose to take a fresh look at the RRIM by opening a new proceeding, which it believes "is necessary to consider a more transparent, more streamlined and less controversial RRIM program" (CPUC, 2009b). Unfortunately for ratepayers, rebalancing risk and reward was not stated as a priority, and the need for accurate evaluation of program benefits was only noted in the concurring opinion of one Commissioner. This proceeding has been bifurcated into two tracks; one to resolve earnings claims for 2006-08 programs, and the other to establish a new mechanism for 2009-11. For the first track, settlement talks are underway to determine if an incentive payment is justified for 2009, and to determine how *ex post* impact evaluations will be used in the final claim for 2006-08 programs. In the second track, the CPUC issued a white paper with thoughtful and innovative suggestions for a new mechanism (CPUC 2009c). Parties have commented on these suggestions and filed proposals for the new mechanism on May 22, 2009. Workshops on these proposals are scheduled for June and July, 2009.

RRIM Impacts to Date

It is premature to discuss the overall effectiveness of the RRIM at this time since impact evaluations of the 2006-08 as still in process. But observations can be made relative to the costs and certain impacts. The only certain data point is that RRIM provided an $82 million payment to the four utilities for 2006 – 07, which was paid for by rate increases in January 2009. Whether the payment was a reward for great performance, or an unjustified corporate handout depends on who you ask. The utilities reported that they had achieved 118% of the CPUC's goals, but

independent evaluators calculated that they had achieved only 82% of goals in the best-case scenario (CPUC, 2009a, Table ES2a, p.9). The final arbitration of this issue of performance will come in the middle of 2010, when the ex post evaluation of 2006-08 programs will be completed and actual savings achieved will be verified. However, evidence is available now regarding how RRIM can impact program and portfolio design. Utility applications for 2009-11 energy efficiency program portfolios contain an extensive list of requested policy changes, including that activities in direct support of the Strategic Plan that "will produce minimal or no cost-effective, measurable savings in 2009-11" should be exempt from the RRIM (PG&E, 2009, p.2A1-16).[3] The CPUC found that "the IOU portfolios, as filed, do not fully reflect the "significant shift" sought by this Commission or the near term activities identified in the Strategic Plan" (CPUC, 2008c, p.4).[4] From the ratepayer perspective, the first obvious impact of RRIM is that it focuses utility portfolios on short-lived measures like compact fluorescent lights (CFLs), rather than longer-term objectives whose energy savings impacts are less certain and more difficult to measure.

Problem Areas with California's RRIM

Given the developments over the last year, all parties involved with RRIM recognize that changes are needed, but there is vast disagreement as to what is needed and when it is needed. Energy efficiency programs are often compared to a "negawatt" power plant, but the "energy production" of energy efficiency programs is significantly less certain when compared to power plants with a rated nameplate capacity and historic capacity factor. A bedrock of California's RRIM has been that the resulting "performance risk" is offset by requiring that incentives are paid only for savings performance verified by independent consultants after the energy saving devices are in service.[5] Ratepayer advocates should be concerned that the ratepayer insurance against the risk of poor performance has been removed, and that utilities are not being held accountable for the actual savings resulting from their programs.

California utilities subject to RRIM and the Natural Resources Defense Council (NRDC) focus on the importance of regular and non-refundable annual earnings from RRIM that are consistent with the predictions they have made to investors. They are also concerned that energy savings parameters (e.g. energy reduction rating of equipment, installation rates, annual usage, etc.) are changing over time without the opportunity for the utility to adapt its programs. Parties generally agree that the current mechanism does not incorporate the new market transformation objectives for 2009-11, and that EM&V efforts are expensive, time consuming, and the subject of too much controversy. In California, initial proposals for a new incentive mechanism to address these problem areas include elements of each of the following three recommendations.[6]

[3] This statement and other policy change requests were jointly authored by California's four largest utilities and are also included in the applications of Southern California Edison, San Diego Gas & Electric Company, and Southern California Gas Company.

[4] The CPUC recently issued a decision on the eight utility requested policy changes (CPUC, 2009d). The decision approved one request, denied three, and deferred two from the 2009-11 application docket (A.08-07-021 et al) to the shareholder incentive docket (R.09-01-019). The decision effectively denied two requests, but modified rules and goals in response to issues the utilities raised.

[5] California has budgeted over $90 million for the ex post impact evaluation of 2006-08 energy efficiency programs.

[6] As filed by seven parties on May 22, 2009 in CPUC docket R.09-01-019.

Recommendations to Other Policymakers Considering Shareholder Incentives

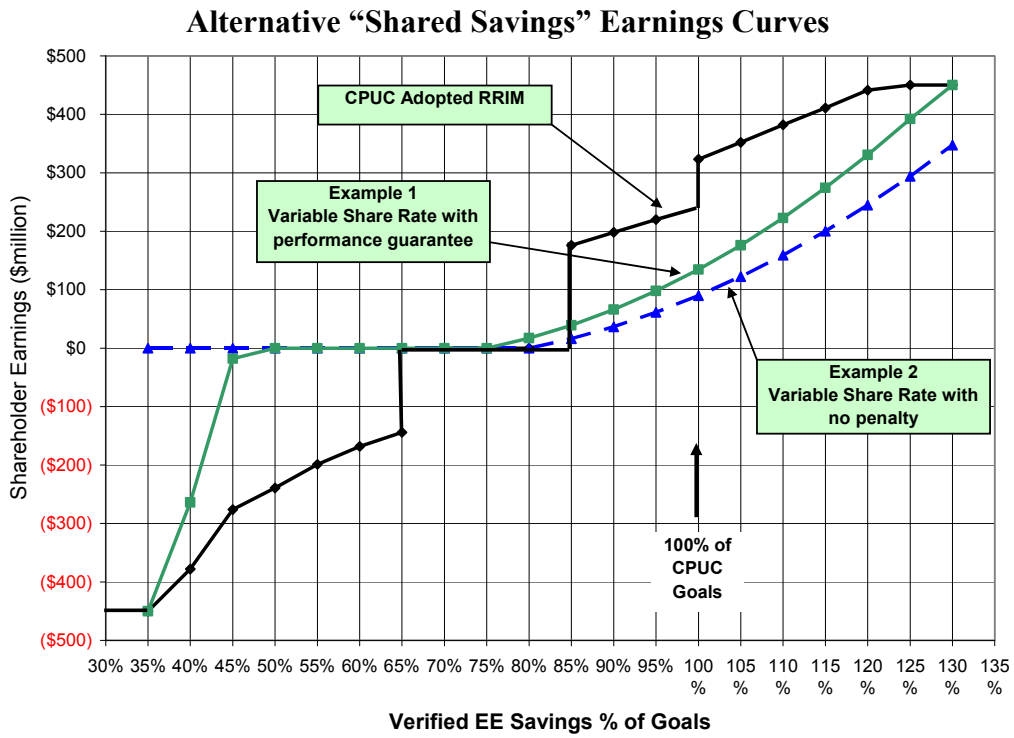
Policymakers and regulators considering how shareholder incentives could impact energy savings in their states should consider: 1) a "shared savings rate" mechanism, with adjustments based on California's experience; 2) design an alternate incentive mechanism based on their unique goals, objectives, and level of energy efficiency penetration; and 3) install a non-utility program administrator, which should not require shareholder incentives.

A. Issues to Address When Considering a Shared Savings Rate Mechanism

1. Precisely define the nature of the incentive program. California's RRIM should be a pay for performance mechanism that creates extraordinary earnings for utility shareholders based on extraordinary performance. It appears that California's utilities see RRIM as a method of providing regular earnings that can be treated as operating earnings. In other words, utilities view RRIM as providing income comparable to a salary, while ratepayer advocates view it as providing a bonus for superior performance. Drastically different positions such as these can be avoided with clear and consistent policy direction from the onset of the incentive program development.

2. Alter the penalty portion of the rrim, and reduce the reward level correspondingly. The 9-12% sharing rate in California was established based on the presumption that the RRIM subjected utilities to symmetric risks and rewards. Prior to adoption of the RRIM, utilities bore no risks in their administration of energy efficiency programs due to funding via monthly collections from ratepayers, full cost-recovery, and revenue decoupling. Theoretically, RRIM added the risk of financial penalties if their performance fell below 65% of the state's goals. However, if the risk of penalty were real, utilities may respond by cutting back on innovative, but risky programs which already constitute a small portion of their portfolios. Either way, policy makers should consider whether the performance risk from their energy efficiency programs warrants including penalties. If penalties are not included in the incentive mechanism, the potential rewards should be reduced accordingly.

3. Revise the earnings curve to remove discontinuities. As illustrated previously, the RRIM earnings curve has "jumps" in earnings at 85% and 100% of goals. A utility achieving 84.9% of goals would get no incentive while one at 85.0% could get $50 million. These discontinuities were planned to provide a Minimum Performance Standard (MPS), and to provide an extra reward if utilities met 100% of the savings goals. However, the "all or nothing" nature of these sharp cliffs is viewed as problematic by both utilities and ratepayer advocates. Many alternatives are possible. In 1999, Minnesota pioneered a smooth earnings curve where rewards are low for performance in close proximity to the state's energy savings goals, but rapidly increase to a capped level as goals are exceeded. A wide range of linear and exponential curves can be defined with simple formulae to provide rewards that promote policy objectives over a wide range of performance. By eliminating sharp discontinuities, this approach reduces dependence on measured performance towards goals and therefore reduces EM&V requirements and disputes regarding verification results. Examples of modified earnings curves include:



Source: the author.

4. Simplify the earnings claim process. California established the provision for interim payments to provide utilities with the potential for annual earnings, but as mentioned above, determining the amount of these interim payments has proven extremely problematic. While utilities argue for greater certainty of annual incentive payments, ratepayer advocates throughout the country should never yield on the fundamental requirement that only verified performance should be rewarded. Maintaining the ratepayer protection offered through an unrestricted ex post true-up does raise the possibility that utilities may have to return a portion of interim awards later found to be unwarranted, a process referred to in the financial community as "clawback." The utilities in California have argued that clawback is not consistent with their vision of RRIM earnings being treated as operating earnings. This highlights the importance of the first suggestion above, that regulators clearly define the nature of the incentive program. From a ratepayer perspective, a situation where utilities predict their incentives earnings years in advance, and then argue when their predictions are not met, signals that the state's energy savings goals are too low. Additionally, the concept of returning rewards which are found to be unwarranted is not without precedent. For example, endowment fund managers at Harvard University have bonuses which are subject to "clawback" (Hechinger, 2008, p.B1).

As policy makers struggle with this issue, they should consider the basic principle that risks to ratepayers should guide and modulate reward levels for utilities. It should also be noted that the earnings claim process was only a minor point in the workshops and hearings leading to the adoption of the RRIM, but it has become the central point of contention. This point should remind parties that developing a shareholder incentive mechanism is fraught with pitfalls, that the "devil is in the details," and that the development should be an iterative process.

5. Reward all policy goals, or recognize that goals without rewards may not be achieved. The RRIM was established during the 2006-08 cycle when CPUC policy required programs which produced quantifiable savings and the RRIM conceptually supported achievements for these types of programs. However, the CPUC's policy shift for the 2009-11 cycle towards market transformation (MT) creates longer-term goals which are more difficult to quantify. The existing RRIM cannot accommodate qualitative goals, and without modification, the presence of RRIM would ensure that these other goals would receive less attention than programs with measurable savings, and which generate utility profits. Many options exist to include such goals into an incentive mechanism such as adding additional thresholds, multipliers, or parallel and comparable MT incentive mechanisms. The main point for policy makers is that an incentive program that rewards performance towards some policy goals but not others will predetermine which goals will receive less utility attention and which may not be met in the final analysis. Unless policy makers can agree that some of its policy goals are of secondary importance, and can be excluded from the shared savings mechanism, other alternatives should be considered.

B. Consider Alternatives to a Shared Savings Rate Incentive Mechanism

The RRIM is a shared savings plan that rewards quantifiable increases in net benefits to ratepayers. This has inherent attractiveness to ratepayers, but also has shortcomings, such as rewarding ongoing utility programs that produce short-lived savings, discouraging risk and innovation, and an inability to reward qualitative non-resource policy objectives. The ultimate goal of ratepayer subsidized energy efficiency programs is not to achieve a measurable level of energy savings in a given year, but rather to sustainably avoid the financial and environmental costs of new power plants. A detailed review of alternative mechanisms is beyond the scope of this paper, but examples include rewarding:

- Reductions in forecasted demand
- Reductions in greenhouse gas (GHG) emissions
- Reductions in investment in supply-side resources or energy procurement[7]
- Compliance with Renewable Portfolio Standard (RPS) targets

Referring to the final example, energy efficiency programs impact RPS achievements by reducing overall demand, thereby reducing the amount of megawatt-hours needed to meet the mandated percentage of clean generation. Penalties for non-compliance with RPS standards could be avoided through energy efficiency programs. Energy efficiency would have a more direct impact if energy efficiency savings were counted towards RPS targets. Another option currently used in Nevada is to provide a "return on investment" for energy efficiency which could be higher than the return on a supply-side investment. However, this mechanism does not reward savings performance, and policy makers should carefully consider who is making the investment, who owns the energy efficiency equipment, and how the risks involved compare to a supply-side investment before considering this option. Once again, the guiding principal should be balancing risk and reward, or providing only risk adjusted rewards. Policy makers should also consider how new technologies such as those related to the smart grid and advanced meters

[7] One method of achieving this is by targeting energy efficiency programs that reduce local distribution constraints.

can be utilized. For example, advanced meters can provide feedback on changes in consumption which could be used to simplify and increase confidence in the evaluation results for energy efficiency programs.

C. Non-Utility Administration Should Be Considered

Non-utility administration of energy efficiency programs was considered out-of-scope in developing California's RRIM, but policy makers should be aware that Oregon and Vermont have non-utility energy efficiency administration, and were ranked #2 and #4 in ACEEE's 2008 survey of energy efficiency programs (Eldridge et al, 2008). The merits of utility vs. non-utility administration are not discussed in this paper, except to note that the cost of shareholder incentives is unique to the former.

Conclusion

Energy reduction through energy efficiency can reduce the impacts of climate change and dependence on fossil fuels, without harming ratepayers in the short-term with higher rates. But California's current RRIM drives the utilities' energy efficiency implementation, and results in an effort that focuses more on maximizing incentive income, and less on achieving long-term, persistent energy savings. As California's policy shifts to market transformation, evidence is mounting that RRIM will yield utility energy efficiency portfolios that counter many of the CPUC's long-term policy objectives. Regulators, utilities, and parties in other states should be aware of these issues when contemplating shareholder incentives, and should closely compare their policy goals and penetration of energy efficiency with California's before adopting any element of a shareholder incentive mechanism. They should also look to the experience of other states and consider non-utility administered energy efficiency programs for which the added cost of shareholder incentives may not be required.

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